

**قرار رئيس مجلس الإدارة رقم (53) لسنة 2014
بشأن اعتماد لائحة إجراءات تحويل المركبات للغاز الطبيعي**

رئيس مجلس الإدارة :

- بعد الاطلاع على القانون الاتحادي رقم 28 لسنة 2001 بإنشاء هيئة الإمارات للمواصفات والمقاييس وتعديلاته،

- وعلى قرار مجلس الإدارة في اجتماعه رقم 2014/3 بتاريخ 2014/7/3 باعتماد لائحة إجراءات تحويل المركبات للغاز الطبيعي

قرر ما يلي:

مادة أولى

تعمد لائحة إجراءات تحويل المركبات للغاز الطبيعي والمرققة بهذا القرار.

مادة ثانية

يبلغ هذا القرار للجهات ذات العلاقة وينشر مع اللائحة المذكورة في الجريدة الرسمية ويعمل بها اعتباراً من اليوم التالي لتاريخ النشر.

الدكتور / راشد أحمد بن فهد

وزير البيئة والمياه

رئيس مجلس إدارة هيئة الإمارات للمواصفات والمقاييس

صدر في دبي : بتاريخ : 15 / 7 / 2014

هيئة الامارات للمواصفات والمقاييس
Emirates Authority for Standardization & Metrology
(ESMA)



اللائحة الإماراتية لإجراءات تحويل المركبات للغاز الطبيعي
UAE Regulation of Natural Gas Driven Vehicles (NGVs)

دولة الإمارات العربية المتحدة
UNITED ARAB EMIRATES

التقديم

هيئة الإمارات للمواصفات والمقاييس هي هيئة وطنية ومن مهامها الرئيسية إعداد واصدار المواصفات القياسية الإماراتية واللوائح حيث تتولى إعدادها لجان فنية متخصصة تتشكل من الجهات المختصة الحكومية والخاصة.

قامت الهيئة من خلال فريق عمل فني شكلته لهذا الغرض بالتعاون مع شركة أدنوك للتوزيع بإعداد مشروع هذه اللائحة الخاصة بإجراءات تحويل المركبات للعمل بالغاز الطبيعي في الدولة وكذلك مركبات الغاز الطبيعي الموردة من المصنعين مباشرة.

وتم تعميم مشروع اللائحة على جميع الجهات المسؤولة عن تنفيذ مشروع تحويل المركبات للغاز الطبيعي في الدولة و تمت مناقشة جميع الملاحظات الواردة وأخذها في الاعتبار .

وتم اعتماد هذه اللائحة من مجلس إدارة الهيئة في اجتماعه الثالث لعام 2014 وصدرت بموجب قرار معالي رئيس مجلس الإدارة رقم (53) لسنة 2014 بتاريخ 15/7/2014 م. وستلغي هذه اللائحة وتحل محل المواصفة القياسية الإماراتية رقم UAE.S:5007:2007 "دليل التجهيزات والفحص والتشغيل للمركبات التي تعمل بوقود الغاز الطبيعي المضغوط".

Foreword

Emirates Authority for Standardization & Metrology (ESMA) has a national responsibility for standardization activities. One of ESMA main functions is to issue UAE Standards and regulations through specialized technical committees and working Groups.

ESMA through established Specialize Technical Working in cooperation with AD-NOC Distribution had prepared the draft of this UAE regulation of Gas Driven Vehicles (Vehicle Conversion into natural gas in UAE as well as OEM NGVs) and circulated to all Executers of this project in UAE for comments.

The final Draft of this UAE Regulation has been approved by ESMA Board of Directors in its third meeting 2014 and issued by His Excellency the President of the Board of Directors, decree no. (53) of year 2014. The approved Regulation will replace and supersede the UAE.S 5007 "Guideline for equipment, testing and operation of vehicles propelled by Compressed Natural Gas".

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UAE Regulation of Natural Gas Vehicles Part 1: General Information

1. Related Laws and Legal Requirements

National Laws, Decrees, Regulations and any other Legal requirements	
National Laws and Decrees	
Federal Law No. 21/ 2001	Establishment of the Emirate Authority for Standardization and Metrology
Relative Regulations	
*) UAE.S ECE R110	Uniform provisions concerning the approval of: 1. Specific Components of Motor Vehicles Using Compressed Natural Gas (CNG) In Their Propulsion System; 2. Vehicles With Regard To the Installation of Specific Components of an Approved Type for the Use of Compressed Natural Gas (CNG) In Their Propulsion System.
*) UAE.S ECE R115	Uniform provisions concerning the approval of specific CNG (Compressed Natural Gas) retrofit systems to be installed in motor vehicles for the use of CNG in Their propulsion system

*) Refers to the latest version of the reference standard

2. Definitions and Abbreviations

2.1. Definitions

GST: Is conducted periodically and at special events (accident, fire, repair) Test of the CNG system on all NGVs.

PTI: Is a periodical visual inspection of the CNG system

GSIT: Is the first inspection of CNG system after installation

Stakeholder: Is a person, group, organization, or system that affects or can be affected by an organization's actions.

2.2. Abbreviations

ESMA Emirates Authority for Standardization and Metrology

ADNOC Abu Dhabi National Oil Company

ADNOC DIST. ADNOC Distribution

ENOC Emirates National Oil Company

EMGAS Emirates GAS – ENOC Group

SEWA Sharjah Electricity & Water Authority

ENAS Emirates National Accreditation Service

ECAS Emirates Conformity Assessment System

(UN)ECE United Nations Economic Commission for Europe

NGV Natural Gas Vehicle

OEM Original Equipment Manufacturer

CNG Compressed Natural Gas

DF Dual Fuel

CoC Certificate of Conformity

GST Gas System Test

GSIT Gas System Installation Test

PTI Periodical Technical Inspection

RVW	Road Vehicle Workshop
QAM	Quality Assurance Manager
TPI	Third Party Inspection Body, accredited by ENAS
irt	In relation to

3. Purpose

The purpose of this Regulation is to establish and operate a scheme regulating vehicle conversion into natural gas as well as OEM NGVs in the UAE.

4. Scope

The scope of this regulation comprises the following areas:

- Legal criteria for the use of natural gas components and their installation into vehicles
- Stakeholders and their roles
- Certification of NGV RVW
- Approval of converted vehicles and OEM vehicles using Compressed Natural Gas (CNG) in their propulsion system
- Training and certification of the NGV specialists and the responsible persons
- Inspections and certification of NGVs
- RVW requirements (safety, operation and certification)
- Labeling and marking
- Cylinder re-inspection Requirements

5. Technical Requirements

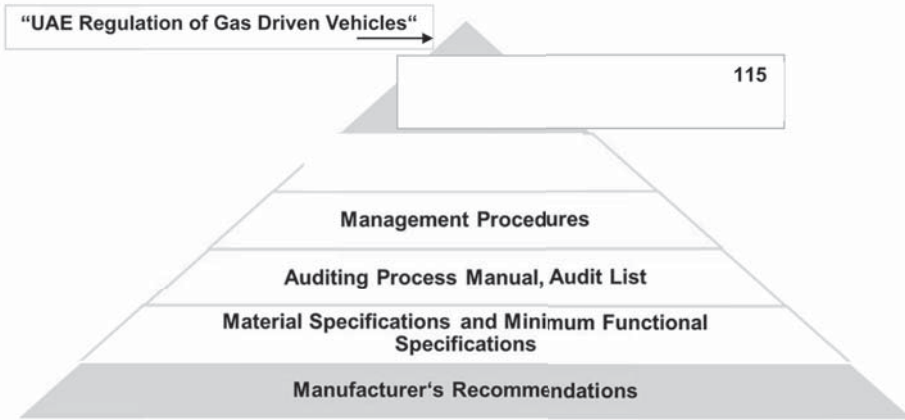


Figure 1: Hierarchy of Requirements

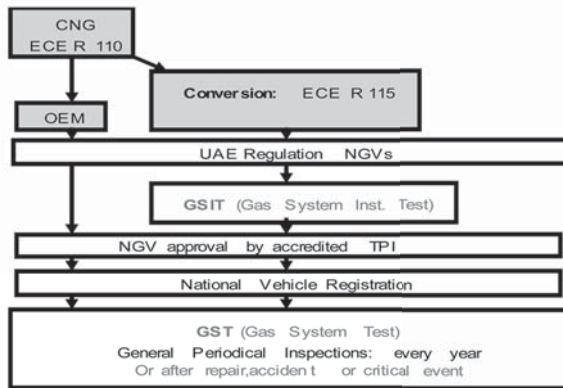


Figure 2: NGV implementation flow chart

6. The Executer & Regulatory body in the various UAE Emirates

#	Emirate	Executer	Regulatory body
1	Abu Dhabi	ADNOC Distribution	ESMA
2	Dubai	Emirate Gas (ENOC)	ESMA
3	Sharjah	SEWA (Sharjah Electricity & Water Authority)	ESMA
4	Ajman	To be assigned	ESMA
5	Ras Al Khaimah	To be assigned	ESMA
6	Umm Al Quwain	To be assigned	ESMA
7	Fujairah	To be assigned	ESMA

7. ESMA Requirements

7.1. Certification and Inspection bodies

- 7.1.1 Certification and inspection bodies shall have a legal status and commercial and technical license according to the local regulations
- 7.1.2 Certification and inspection bodies shall be accredited according to the requirements of ENAS.
- 7.1.3 Certification and inspection bodies shall be registered with executer.

7.2. Conversion Centers and NGV Agency workshops

- 7.2.1 Conversion centers and NGV Agency workshops shall have a legal status and commercial and technical license according to the local regulations.
- 7.2.2 Conversion centers and NGV Agency workshops shall be certified according to the requirements of this regulation.
- 7.2.3 For the purpose of this Regulation, Conversion centers and NGV Agency workshops are called "Road Vehicle Workshops" (RVW).
- 7.2.4 Conversion centers and NGV Agency workshops shall be registered with executer

8. Stakeholders Tasks

8.1 Executer Tasks

- 8.1.1 Manage, control and develop the “CNG Business “.
- 8.1.2 Cooperate with the concerned Authority in charge and as per Executive Council Decrees to provide and develop the business regulation.
- 8.1.3 Convert and maintain the vehicles which work by Compressed Natural gas as a fuel.
- 8.1.4 Design, construct and operate the compressed Natural gas filling station and Conversion Centers

8.2 ESMA Tasks

- 8.2.1 Maintain and update the UAE technical regulation number UAE.S ECE R 110 & UAE.S ECE R 115 and any issued or adopted standard/regulation related to the Compressed Natural Gas business
- 8.2.2 Provide any required or necessary standard/regulation related to the Natural Gas business
- 8.2.3 ECAS certifies the special retrofit parts and conversion components.

8.3 ENAS Tasks

- 8.3.1 To accredit management system certification bodies according to the requirements of the standard UAE.S GSO ISO/IEC 17021.
- 8.3.2 To accredit Third Party Inspection bodies according to the requirements of the standard UAE.S GSO ISO/ IEC 17020
- 8.3.3 To accredit personnel of certification bodies according to the requirements of the standard UAE.S GSO ISO/IEC 17024

8.4 TPI Tasks

- 8.4.1 Inspection, auditing, and certification of Road Vehicle Workshops to convert vehicles to natural gas.
- 8.4.2 Training, examination, and certification of the gas conversion specialists and the responsible persons according to this regulation.
- 8.4.3 Review and approval of the CNG components and documents to make they comply with the applicable regulations
- 8.4.4 Final inspection, approval, and certification of vehicles subsequent to CNG conversion (GSIT).
- 8.4.5 Cylinder re-inspection and certification.
- 8.4.6 Periodical inspection of NGVs and inspection of NGVs after critical event (GST)

9. Fees

Any fees incurred by any of the stakeholders in the provision of implementing the gas conversion scheme shall be approved by the executor.

10. Training

Training is carried out according to the training scheme in this regulation.

11. Technical References

Topic	Regulation
Conversion (components, installation) Certification and Tests (GSIT & GST) requirements	UAE.S ECE R110 and UAE.S ECE R115 UAE Regulation of Gas Driven Vehicles
Conversion centers requirements (safety, operation and certification)	<u>UAE Regulation of Gas Driven Vehicles</u>
People involved in the conversion process (Training and certification)	<u>UAE Regulation of Gas Driven Vehicles</u>
Labeling and Marking	<u>UAE Regulation of Gas Driven Vehicles</u>
Cylinder re-inspection Requirement, process and the interval	<u>UAE Regulation of Gas Driven Vehicles</u> <u>UAE.S ECE R110</u> <u>ISO/19078</u>

12. Specific restrictions

Used NGV

Imported used vehicles with CNG system onboard as well as any used CNG components taken from an imported used vehicle and single imported used components are not allowed /permitted to be utilized with natural gas as a fuel.

Authorized conversion centers/NGV dealer workshops

Only the authorized conversion centers and NGV dealer workshops which are nominated by the executer are permitted to work in CNG business and appropriate legal actions shall be taken against any unauthorized conversion center.

Material used for high pressure tubing in vehicle conversion

For high pressure tubing Stainless Steel 316L and CoC for CNG are mandatory.

UAE.S ECE R115

PART – I

This part of the regulation is Not Adopted and Accordingly "LPG" Is Not Allowed to Use as Motor Vehicles Fuel in UAE.

UAE Regulation of Natural Gas Vehicles Part 2: Guidelines and Procedures

I Pressurized gas systems and pressure vessels

1. Motor vehicles which are fitted with special equipment or components for use with compressed natural gas (CNG) in their drive system, must as a result of converting be approved in accordance with the provisions of the regulations stated in the Annex 1 of this regulation. Before the first vehicle registration the vehicle must be submitted to a final Executer/Executer nominated TPI acceptance to obtain a vehicle approval.
2. Special retrofit systems for using compressed natural gas (CNG) in the propulsion system of a road vehicle must after fitting be approved in compliance with the provisions of the regulations stated in the Annex 1 of this regulation. Before the first use of the retrofit system the vehicle must be submitted to a final Executer/Executer nominated TPI acceptance to obtain a vehicle approval.
3. Special components for using compressed natural gas (CNG) in the propulsion system of a road vehicle must after fitting be approved in compliance with the provisions of the regulations stated in the Annex 1 of this regulation. Furthermore, for their installation, the conditions which are stated in the provisions of the regulations in the Annex 1 of this regulation must be complied with. Before the first use of these components the vehicle must be submitted to a final Executer/Executer nominated TPI acceptance to obtain a vehicle approval.
4. Manufacturers of motor vehicles to Paragraph 1 or retrofit systems to Paragraph 2 or special components to Paragraph 3 must include the required information documents corresponding to the requirements of the regulations stated in the Annex 1, for fitting and safe use during the intended service life and the recommended maintenance. These documents must be made available when required to the persons responsible for fitting, operating and testing.
5. Vehicle owners, whose motor vehicles have been fitted with equipment to Paragraph 2 or Paragraph 3, after installation must submit their vehicles to a gas system installation test (GSIT) in accordance with Appendix I. Gas system installation tests may only be carried out by:
 - a. Responsible persons of certified road vehicle workshops provided that the gas systems are installed at this road vehicle workshop
 - b. Governmentally authorized inspectors for road transportAfter the gas system installation test the owners of motor vehicles with equipment to Paragraphs 2 and 3 must submit their vehicles to final Executer/Executer nominated TPI acceptance to obtain a new vehicle approval.
6. Owners whose road vehicles are fitted with equipment to Paragraphs 1 to 3 must undergo a gas system test (GST) to Appendix I at least every one year, or immediately subsequent to any gas system repair. This also applies if the gas equipment is impaired by fire or accident. Gas system tests may only be carried out by:

- a. Responsible persons of certified road vehicle workshops provided that gas systems are installed at this road vehicle workshop
 - b. Governmentally authorized inspectors for road transport
 - c. After the gas system test (GST) the owners of motor vehicles with equipment to Paragraphs 2 and 3 must submit their vehicles to final Executer/Executer nominated TPI acceptance.
7. The approval of road vehicle workshops for performing-the gas system installation tests to Paragraph 5, the gas system tests to Paragraph 6 is described in Appendix II. The training of the nominated persons according Paragraph 5 Clause b and Paragraph 2 and 3 as well as Paragraph 6 Clause c and Paragraph 2 and 3 has to be carried out in line with the requirements of numbers 2.5, and 7.3 of Appendix II
8. Cylinders for using compressed natural gas (CNG) in the propulsion system of a road vehicle shall be re-inspected after 36 (36) months of use as follows based on ISO/19078 requirements :
- a. External (visual) inspection by Executer/Executer nominated TPI
 - b. Internal (visual) inspection by Executer/Executer nominated TPI
 - c. Volumetric expansion test by Executer/Executer nominated TPI

Notwithstanding the provisions of I, Paragraph 8, c., the volumetric expansion test only applies for a number of 10% of randomly chosen cylinders out of the field, or if evidence is given which requires this test. It is with the Executer/Executer nominated TPI to decide.

II Guidelines for carrying out gas system installation tests

(in the following abbreviated to GSIT) or the recurring or other gas system tests (in the following abbreviated to GST) (GSIT/GST-Guidelines for carrying out tests).

1. General

- 1.1 The guidelines are valid for carrying out the GSIT to I Paragraph 5 and the GST to I Paragraph 6. GST to be made as a part of the annual vehicle re-inspection.
- 1.2 When carrying out the GSIT and the GST it is to be determined whether the condition and gas tightness of the tested vehicle are to the current state of the art and can be classified as 'satisfactory'. To do so valid manufacturer information for the vehicle and the subsequent detailed scope of the work to be carried out.
- 1.3 As evidence of the determined condition of the gas system and its equipment for the inspected vehicle, a certificate is to be issued by the responsible person corresponding to the requirements of Appendix I No 2.4. An example of the evidence is given in the Form 1 of these guidelines. The evidence is to be kept for 3 years.
- 1.4 When testing the tightness of the gas system the leak detector used must be in accordance with the manufacturer's directive.

2. Preparatory activities

- 2.1 Vehicle documentation to be presented.
- 2.2 Check that the documents presented belong to the vehicle concerned.
- 2.3 Determine for the examined vehicle which gas is used in order to ensure that the required equipment is available.
- 2.4 Ensure that the gas tank is at least 50 % full with fuel or filled to the manufacturer's requirements. If the quantity of gas is less than specified a further testing is not possible.

3. Carrying out the gas system test (GST)

3.1 Testing a gas (CNG) driven vehicle.

3.1.1 Identification of the components

By identifying the components it is ensured that only allowed and properly marked components were used. For this are included:

- Gas tank
- Pressure regulator
- Gas pipe material
- Safety relevant components, e.g. non-return valve, safety devices , receptacles, etc.

3.1.2 Visual inspection of components

All gas components are to undergo a visual inspection. During a visual inspection it is possible to check the condition (damage, corrosion., fixing) of the gas system without disassembly. To be carefully inspected

- Specified lifetime of the pressure gas container/s
- Receptacle
- Gas tank and fixation
- Tank armatures / valves
- Pressure relief device
- all gas conducting pipe work
- Gas vapor retaining systems
- Pressure regulator
- Injectors
- Warning lights / control lights.

3.1.3 Functional test

The function test includes:

- Main shut-off valve of each gas tank
- Fuel change-over switch - if fitted
- Control device / start interruption

3.1.4 Leak test

A precondition for the leak test is that gas tank must be filled in compliance with number 2.4.

Set fuel change over switch to gas operation (only for bivalent operation) and start engine. With the engine running use the leak detector or the leak detection spray to carry out the leak test. During the test all screw connections, welded joints (if present), engine supply-pipes, valves and other relevant gas components are to be 'sniffed' with the leak detector or sprayed with the leak detection spray.

If installed, check also the high and low pressure components.

If when using the leak detector a gas emission is detected, then the leak detection spray is also to be used to localize the leaking connection or the peaking component. Possibly all un-tight connections and components are to be sprayed. The contact time period for the leak spray to become effective is at least 3 minutes. The gas system can be defined as leak free when within the effective period for the spray no bubbles are detected.

If it is not possible to undertake the test with the engine running, then the engine is to be run for at least 2 minutes under gas operation and after switching off the engine the leak test is to be carried out immediately.

The manufacturer's information for carrying out the test is to be observed.

3.2 Issue of the certificate to No 1.3.

4. Carrying out the gas system installation test (GSIT)

4.1 Allocation of retrofit equipment to vehicle's range of application

4.2 Allocation of workshop certification regarding the set-up and/or software version according to the provisions of the approval or the manufacturer

4.3 Installation inspection, e.g., installation of pipes/wires, labeling of pipes/wires, pipe/wiring connections, tank fixations, etc.

4.4 Functional test e.g. switching over from petrol to gas, shut-off valves etc..

4.5 Leak test of the system according to No 3.1.4

4.6 Issue of the certificate to No 1.3.

Form 1

in accordance with no. 1.3 of II "GSIT/GST-Guidelines for carrying out tests"

Certificate of conducted

Gas System Test (GST)

periodical test

specific test

1. Type of gas system

CNG (compressed natural gas)

2. Date of initial registration

3. Vehicle manufacturer

4. Vehicle model

5. Vehicle power and engine volume

6. Vehicle ID number

7. License number

8. Inspecting company

9. Result of visual inspection

passed did not pass

Remarks

10. Result of functional inspection

passed did not pass

Remarks

11. Result of leakage test

passed did not pass

Remarks

12. Final result

passed did not pass, re-inspection
required

Control number

Date

Name, Signature of responsible person

**Certificate of conducted
Gas System Installation Test (GSIT)**

to be presented to the authority

to be presented to a legally li-
censed expert

1. Type of gas system

CNG (compressed natural gas)

2. Date of initial registration

3. Vehicle manufacturer

4. Vehicle model

5. Vehicle power and engine volume

6. Vehicle ID number

7. License number

8. Inspecting company

9. Result of visual inspection

passed did not pass

Remarks

10. Result of functional inspection

passed did not pass

Remarks

11. Result of leakage test

passed did not pass

Remarks

12. Final result

passed did not pass, re-inspection
required

Control number

Date Name, Signature of responsible person

III Guidelines for the approval of road vehicle workshops

to undertake gas system installation tests (in the following abbreviated to GSIT) or the recurring or other gas system tests (in the following abbreviated to GST) to I irt App I and II (Gas workshop approval guidelines).

1 General

These guidelines are valid for road vehicle workshops (in the following abbreviated to RVW), which carry out and certify GSIT or other GST as specified in I irt. Appendix I and therefore need to be approved to Appendix II No 1. The certification to carry out the GSIT is also valid to carry out the GST. Only GSIT certified workshops are entitled and allowed to convert vehicles to use compressed natural gas (CNG) in their propulsion system according to paragraph (1) through (3) of I.

2 Application

The application for approval is to be sent to the executor according to Appendix II No 1 in duplicate; it includes each operational workshop belonging to the applicant wanting to carry out the GSIT or the GST (Main address, branch office(s) and associated companies). For each workshop a form is required as shown in Appendix 1 of these guidelines. The application forms are distributed by the Executor./Executor nominated TPI.

- 2.1 Along with the application the following documents are to be included, especially a certificate from the local chamber of trade/commerce the applicant in person or a person permanently employed by the RVW who is able to work indecently and possesses the required engineering skills to be able to correct any detected faults pertaining to a GSIT or GST,
- 2.2 a certificate of good conduct is required for presentation to the administration authority, and if required also for the nominated representatives as well as for the persons responsible for carrying out the GSIT or the GST. The information at the time of application may not be older than six months,
- 2.3 proof of the approval as "certified workshop" according to the least requirement as specified in 3.4.1 of these guidelines,
- 2.4 evidence that the person responsible for carrying out the GSIT or the GST as well as, if required, other employed specialists carrying out the GST have the necessary apprenticeship to Appendix II No 2.4, evidence that the applicant or the persons responsible for carrying out the GSIT or the GST as well as, if required, other employed specialists carrying out the GST have undergone the necessary training to Appendix II No 2.5 successfully.
- 2.5 Confirmation of the required third party insurance to Appendix II No 2.7-including an indemnity declaration to Appendix II No 2.8.

3 Requirements for certification

3.1 Reliability

The applicant, its representatives according to the act, contract or bye-laws and those responsible for carrying out the GSIT and the GST must be reliable people.

3.2 Specialist knowledge

3.2.1 The applicant must prove that the specialist requirements to Appendix II No 2.4 have been fulfilled, to clear detected deficiencies appertaining to the GSIT or the GST. This is not necessary if the applicant has appointed one or more responsible persons to carry out the GSIT or the GST

3.2.2 If the applicant has appointed one or more persons responsible for carrying out the GSIT or GST then the same specialist requirements have to be fulfilled to 3.2.1. The applicant is to give evidence of this. The responsible persons appointed by the applicant must be employed by him and work in the nominated workshop.

3.2.3 The applicant has to prove that the persons appointed to carry out the GSIT or the GST or the specialists appointed to carry out the GST have undergone the required training to Appendix II No 2.5 successfully. With this the respective certificates of the required training are to be presented.

3.3 Test location, Test and measurement devices and other equipment

3.3.1 The applicant must prove that each operating workshop which is to carry out the GSIT or the GST is approved as a "certified conversion workshop". For the continuing instruction of the persons carrying out the GSIT or the GST or those specialists carrying out the GST, the following latest versions of specified documents have to be provided and kept update:

3.3.1.1 Those for the GSIT relevant regulation of this ordinance including the applicable guidelines in the current valid edition,

3.3.1.2 Technical data and test instructions from the OEM or gas system manufacturer for carrying out the GSIT in the framework of the certification.

3.4 Quality Assurance of the correct execution of the GSIT or the GST

3.4.1 Operating organization's documentation

The RVW management must produce the documentation which contains the internal regulations that will guarantee the correct execution of the GSIT or the GST.

The documentation must as a minimum contain the requirements for:

- Representatives of the RVW to 3.4.2,
- Quality and equipment of operating sites to 3.3,
- Qualifications and further training of staff which are involved with carrying out the GSIT or the GST to 3.2.3,
- Monitoring that the measuring and test equipment used comply with the relevant regulations for their calibration as well as maintenance instructions,
- internal measures for the maintenance of quality of execution and

documentation for the GSIT and the GST.

3.4.2 Representatives of the RVW

The RVW management appoint a representative (QA manager QAM) who within the organization is responsible for the measures to achieve the specified quality.

The QAM must

- have the qualifications to carry out the GST,
- report directly to the RVW management as long as he is not the management himself,
- the knowledge for implementing the regulations and guidelines for carrying out the GST as well as the operating organization's acceptance procedure for the RVW,
- ensure that he is constantly informed of the current regulations and guidelines for carrying out the GSIT. If necessary he should undergo additional training. For the role of QAM an responsible person can also be nominated.

The QAM has in particular the following tasks:

- to check regularly the business organization and the operation of the RVW at his own responsibility for correlation of the relevant regulations with the RVW documentation,
- to make available on demand to Executer/Executer nominated TPI in coordination with the management of all required data, information and documentation,
- the checking of documentation to 3.4.1.

Compliance with the legal and, if required, internal requests are to be checked continuously by the RVW.

4 Quality Assurance for execution of, and documentation for the GSIT or the GST

4.1 Operating organization

The RVW has to explain for the application how it will ensure that it will adhere to the regulations to 3.4.1. After successful approval it is the duty of the RVW to enforce the regulations. The responsibility lies with the RVW management.

4.2 Documentation of staff qualifications

The RVW will document without any omissions the following data and information for each specialist staff member:

- Training measures corresponding those published in the "GST/GSIT training guidelines",
- Observance of possible executer collateral clauses.

The documentation is to be drawn up in duplicate; it must until the next examination by Executer/Executer nominated TPI be archived, but for at least 5 years.

4.3 Evidence-Seal and stamp No

4.3.1 The stamp No. is allocated to the RVW by executer.

4.3.2 The proof seals of the type shown in Appendix 3 are obtained by the RVW from Executer/Executer nominated TPI and given as required to the responsible persons.

4.4. Administration and use of proof seal and the embossing die

4.4.1 The RVW proves the correct administration and use of the individual proof seals continuously through a suitable procedure for a period of 3 years. Required for this are at least the following procedures:

- Purchase of the proof seal by the RVW,
- Application of the proof seal with correlation to the supporting documents,
- Disposition of the proof seal and the associated documents in special cases such as damage, destruction, theft and loss.

4.4.2 Suitable measures against theft and misuse of the proof seal and of stamp must be taken by the RVW. The precise instructions are to be defined in the company - organization's documentation to 3.4.1.

4.5 Documented evidence of conformity of executed GSIT or GST

4.5.1 The executed GSIT or GST are documented such that each time an up to date summary of the whereabouts of all supporting documents and proof seals is possible.

4.5.2 For all supporting documents to Appendix II No 2.4, which are produced with the aid of an electronic, computer, a duplicate (copy) is to be archived for a period of 3 years.

4.5.3 Evaluation of executed GSIT or GST

The QAM issues within a cycle of maximum 1 month for motor vehicles types which are fitted with special equipment or components for use with compressed natural gas (CNG) in their engine, standardized lists of each defect found during GSIT or GST, itemized for the actual test case and the determined deficiency. These lists (defect summaries) are to be kept for at least 3 years and presented on demand to Executer/Executer nominated TPI.

Each document in evidence shall be made available within 2 working days including the information regarding

- official registration of the vehicle or
- the vehicle identification no. (at least the last 7 figures)

in original form or as a copy of that to Executer/Executer nominated TPI.

4.6 Test equipment monitoring

The RVW management guarantees by means of work and operating procedures that all measurement and test equipment used for GSIT and GST is functioning, maintained to the manufacturer's instructions, and in accordance with legal requirements tested and calibrated.

4.7 Unexpected audits / inspections

4.7.1 Executer/Executer nominated TPI are to check at least every 3 years compliance with the legal requirements and the provisions of these guidelines by the RVW. The requirement of the RVW is to make available all the required information and documentation. Deviations and breaches found can result in the withdrawal of the RVW's license to carry out gas testing. In cases of dispute decision is taken by the jurisdiction.

5 Regulations for issuing GST/GSIT approvals

5.1 Issuing and revocation

The process of issuing as well as revoking and return approvals is covered by UAE legislation

5.2 Control No. and Seal No

Executer issues the control no. The stamp consists of the Emirate's abbreviation and the number of the RVW

The abbreviations for the Emirates are:

- Abu Dhabi ABD
- Ajman AJM
- Dubai DXB
- Fujairah FUJ
- Ras al Khaimah RAK
- Sharjah SHJ
- Umm al Quwain UAQ

The number is:

Year-month-day consecutive number

For example the stamp

AD-2010-08-15_03

indicates a workshop approved in the Emirate of Abu Dhabi in August 15th of 2010 as third workshop of that day.

In cases of revocation or the return of the license both the stamp and proof seal are to be returned to executer.

5.3 Collateral clauses and restrictions

The approval can be associated with collateral clauses which are required for the proper execution of the GSIT or the GST. The license is not transferable.

5.3.1 The license can be restricted to carrying out the GST.

5.3.2 Changes of personnel/ personal details scheduled under 3.2 are to be communicated to Executer/Executer nominated TPI immediately. Persons licensed for the first time may only carry out GSIT or GSTs after the license has been changed accordingly.

5.3.3 The RVW can in agreement with Executer/Executer nominated TPI submit all documents and reports electronically.

Appendix 1

in accordance with no.2 of III "Gas workshop approval guidelines"

Application to approve a workshop to undertake Gas System Installation Test (GSIT) or Gas System Test (GST) to I in association with the Appendices I and II

1 Name and location of applicant(s)

1.1 Location of office applicable to the application.*)

1.2 The company is registered as

- road vehicle technology trade
- bodywork and vehicle construction trade

in the trades business with the chamber of trade / commerce with the following identifier

Certification by the local chamber of trade/commerce is included.

1.3 The certificate of conduct of the applicant(s) ¹ or the nominated representative(s) for presentation at executer is presented/ is applied for.

1.4 The excerpt from the applicants vehicle register or his/her nominated representative has been submitted.

1.5 The applicant confirms that all personnel to undertake GSIT or GST have sufficient third party insurance to cover all the requirements associated with the test It is to be verified and declared that the insurance is maintained.

Evidence to Road Vehicle Third party insurance to No. 2.7 Appendix II

submitted - not submitted

1.6 The applicant absolves the Emirate in which it is operating and Executer from all third person demands in relationship to GSIT or GST caused by him or the instructed responsible persons or the specialist staff, confirms that a respective insurance has been taken out and declares that the policy has been adhered to

submitted - not submitted

Evidence according UAE regulation "Gas Driven Vehicles" to No. 2.9 Appendix II

submitted - not submitted

2 Responsible Personnel

2.1 Name of persons responsible for carrying out the GSIT or GST.

Name, First name, Address, Signature

Certificate of good conduct for presentation with Executer/Executer nominated TPI is presented/ is applied for.

The extract from the vehicle central register has been submitted.

Name, First name, Address, Signature

Certificate of good conduct for presentation with Executer/Executer nominated TPI is presented/ is applied for.

The extract from the vehicle central register has been submitted.

2.2 The responsible person(s) have the qualifications required to number 2.4. Appendix II UAE Regulation "Gas Driven Vehicles" Supporting documents included:

Name	Qualification
------	---------------

Name	Qualification
------	---------------

The named persons have successfully undergone initial / refresher training to number 2.5 irt. number 7 Appendix II UAE Regulation „Gas Driven Vehicles“. The training center certificate(s) is/are included

.....	Initial / refresher training
Name	Date	

.....	Initial / refresher training
Name	Date	

3 Other employed specialists for undertaking the GST

The employed/specialist/personnel/ to undertake the GST have the required qualification to number 2.4. Appendix II UAE Regulation of "Gas Driven Vehicles". Supporting documents included:

Name	Qualification
Name	Qualification
Name	Qualification
Name	Qualification
Name	Qualification
Name	Qualification

The named persons have successfully undergone initial / refresher training to number 2.5 irt. number 7 Appendix II UAE Regulation of "Gas Driven Vehicles". The training center certificate(s) is/are included

..... Name	..... Date	Initial / refresher training
..... Name	..... Date	Initial / refresher training
..... Name	..... Date	Initial / refresher training
..... Name	..... Date	Initial / refresher training
..... Name	..... Date	Initial / refresher training
..... Name	..... Date	Initial / refresher training

Name

Date

4 Existing requirements

4.1 Road Vehicle Workshop Certification

The conditions and equipment for the work places, included in the application, correspond (- do not correspond -) to the requirement that each operating workshop which is to carry out the GSIT or the GST is approved as a "certified conversion workshop".

The workshop is certified under the number

(Address of work shop)

4.2 Relevant regulations

4.2.1 The relevant UAE Regulation „Gas Driven Vehicles“ regulations for GSIT and GST and the associated guidelines in the currently valid version are (-not -) available.

4.2.2 All technically relevant extracts or guidelines which are required for carrying out the GSIT and GST are (-not-) available.

4.2.3 Technical data and test instructions published by the OEM or the gas retrofit systems manufacturer are (-not-) available.

5 Limitation of approval

The license should (not) be restricted to carrying cut the GST.

6 I/we obligate to communicate immediately any changes to Executer/Executer nominated TPI which affect the conditions of the license.

Location: _____, the _____ 20____

Signature/s of the applicant/s

Appendix 2

Labelling of NGVs

- 1 The label needs to be durable, of a sticker type and may not be removed from the window without the label to be destroyed.
- 2 Size: 95 mm / 65 mm
- 3 Text: Natural Gas Vehicle
Vehicle Plate No.
Next Inspection Date
- 4 TPI Seal

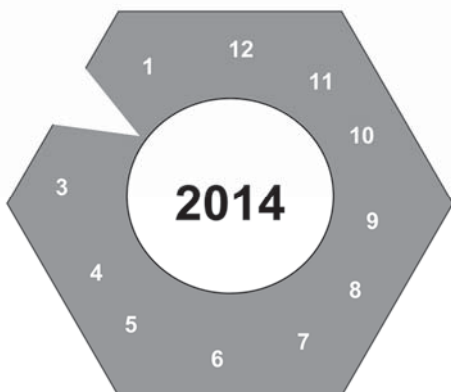
Location:

Appendix 3
Seal for conducting the GSIT and GST



- 1 The seal needs to be durable, of a sticker type and may not be removed from the certificate without the seal to be destroyed.
- 2 The stamp has to be placed above the seal.
- 3 The seal needs to be tamper proof: a hologram showing the Executer/Executer nominated TPI logo needs to be imprinted

Cylinder Inspection Seal (example)



Next mandatory cylinder inspection: in printed year: 2014 marked month: February

- 1 The seal needs to be durable, of a sticker type and may not be removed from the cylinder without the seal to be destroyed.
- 2 The seal has to withstand heat and humidity

Appendix 4

to III "Gas workshop approval guidelines"
(Executer /Executer nominated TPI stamp)

**Approval as a workshop for undertaking GSIT and GST to I in association with
Appendix I
UAE Regulation of „Gas Driven Vehicles“**

Certificate No.: (e.g.. AD-2010-08-15_01)

Herewith we recognize with reservation of permanent withdrawal on the grounds of
Appendix II of the UAE Regulation „Gas Driven Vehicles“ the company

Address of workshop

for undertaking GSIT and GST

The license is restricted to perform GST only:

Yes No

Persons responsible for undertaking GST or GSIT:

Name, First name, Signature

Initial or revision training to GSIT/GST guidelines to number 2.5 Appendix II UAE Regulation of
„Gas Driven Vehicles“ and date of training

Name, First name, Signature

Initial or revision training to GSIT/GST guidelines to number 2.5 Appendix II UAE Regulation of
„Gas Driven Vehicles“ and date of training

Specialists engaged to undertake GST

Name, First name and date of training

Name, First name and date of training

Name, First name and date of training

The license is not transferable. The license can be revoked if in retrospect one of the conditions of Appendix II to the UAE Regulation „Gas Driven Vehicles“ or the gas workshop licensing- guidelines has not been ignored or if the GSIT or GST has been repeatedly incorrectly carried out or if any of the conditions of the license or associated conditions have been grossly violated. Changes to the legal form of the organization or of the business, the owners, the personnel responsible for carrying out the GSIT or the employed specialists, or changes to the company address, the branch offices -on presentation of the required evidence - to be indicated immediately to Executer/Executer nominated TPI. The undertaking of work within the frame work of the license may only be carried out by those responsible persons and the employed specialists as listed before.

If no responsible or trained person is available to carry out the GSIT or the GST then carrying out the GSIT or the GST is strictly prohibited.

Executer/Executer nominated TPI are authorized to undertake verification at any time also at the licensed work shop - of adherence to the legal regulations as well as the license conditions and requirements. The cost of investigations are carried by the work shop. He who is with the assigned persons for investigation purposes during business and operating times is to permit entry to the working area, to make available the necessary documentation and to give the required information..

The following legal restrains apply

1. The GSIT and GST are to be carried out with adherence to the appropriate conditions of the UAE Regulation „Gas Driven Vehicles“ and the published guidelines as well as the relevant instructions of the vehicle or gas retrofit system
The results of the GSIT and the GST are to be documented. A carbon copy, a print or an electronic copy on data storage device version of the documentation remains with Executer/Executer nominated TPI. It is to be retained until the next investigation by Executer/Executer nominated TPI. After 3 years it can be destroyed.
2. The applicant has to ensure that for carrying out the GSIT or the GST the accredited persons and those specialists employed for carrying out the GST have successfully passed the required initial training/refreshers training and that the validity period for the training has not expired. The participation certificate for the training is to be presented to Executer/Executer nominated TPI.
3. The applicant confirms that assigned specialists undertaking the GST have sufficient third party insurance to cover all requirements that exist in connection with the GST. He is to offer proof when required and declares that he will adhere to the conditions of the insurance policy.
4. The applicant absolves the Emirate, in which he is operating, and Executer from all third party claims for damages in connection with the GSIT or the GST caused by him or the responsible persons or the assigned specialists. He confirms the conclusion of the appropriate insurance, and proves this when required and declares that he will adhere to the conditions of the insurance policy.
5. To continuously inform all responsible persons to carry out the GST/GSIT and all employed specialists to carry out the GST, the documents referred to in the guidelines of conversion workshops certification (Gas workshop approval guideline) shall be up to date.

Location ,the 20...

(Signature and stamp of Executer/Executer nominated TPI)

IV Guidelines for the training of responsible persons

carrying out gas system installation test (from here on abbreviated to GSIT) or the recurring or special gas system test (from here on abbreviated to GST) and other specialist staff who carry out the GST to I irt Appendix II (GSIT/GST-Training Guidelines):

1 General, Purpose of Training

- 1.1 As a result of training the responsible persons and the specialist staff engaged in specific GSIT or GST testing activities are correctly prepared.
- 1.2 It is prescribed that all responsible persons and specialist staff must have successfully undertaken training to Appendix II No 2.5. The prescribed training is divided into
 - initial training for responsible persons responsible for the future undertaking of the GSIT and GST, or for specialist staff, who are engaged in carrying out the GST and in
 - Refresher training for responsible persons and specialist staff who have already successfully undergone preliminary training.

The necessary content of the initial and the refresher training giving the capability to undertake the GST may be limited and presented as a single unit.

The valid period for initial and all further refresher training is a maximum of 36 months starting at the month in which the successful final examination took place for the initial or the refresher training. After expiration of the valid period the initial training and examination are to be retaken.

- 1.3 Evidence of successful participation in training is a license condition and is required to carry out the GSIT or the GST in licensed road vehicle work shops.
- 1.4 The responsible persons and specialist staff must IR practically use the learnt lessons during the training.

2 Specialist staff and responsible persons

The instructions as per Appendix II No 2.4 apply.

3 Authority to undertake training, Supervision of training centers

- 3.1 Training may be undertaken by the entities listed in Appendix II No 7 only.
- 3.2 The supervision of training, training content and training centers lies with Executer/Executer nominated TPI.
- 3.3 Apparent deviations or breaches can result in the withdrawal of the particular authority for training centers to undertake training to carry out the GSIT or GST. In cases of dispute decision is taken by jurisdiction.

4 Training staff and training centers

- 4.1 Undertaking training lies with the institutions in Appendix II No 7. This gives qualifier training staff and arranges to have the appropriate training premises.
- 4.2 The training staff needs to have Executer/Executer nominated TPI approval and prove at least 3 years experience in the field of gas vehicles and auditing.
- 4.3 The training staff must take part in an experience exchange at least every 2 years.
- 4.4 To undertake training the training centers must satisfy as a minimum the requirements of Appendix 5. of this guideline
- 4.5 To undertake the training offered the necessary measuring equipment and vehicles must be available in sufficient numbers. The measuring equipment must be maintained to the manufacturer's instruction and tested and checked in accordance with legal requirements.

- 4.6 The relevant regulations, guidelines and reference documents with data and manufacturer's information must be maintained to latest versions.

5 Content of training

- 5.1 Introduction to the regulations and the guidelines and carrying out a GSIT to I irt. App. II .
- 5.2 Introduction of different road vehicle gas system technologies which are relevant to carry out GST or GSIT
- 5.3 Instruction of installing gas systems and the practical execution of GST and if necessary GSIT
- 5.4 Instruction in the use of test equipment in practical application.

6 Conducting training and final examination

- 6.1 The content of training are systems for the propulsion of road vehicles whose fuel is CNG.
- 6.1.1 When undertaking training at least 6, but not more than 12 trainees may be instructed at a time. The number of trainees undergoing instruction in 'practical skills' may be reduced if only then the training aims can be achieved.
- 6.1.2 The duration of the training process for initial training and for refresher training is one day for GST and 3 days for GSIT, the latter including one practical exercise day. If the gas system test training is undertaken as a separate unit the previously mentioned is correspondingly valid.
- 6.1.3 The duration of training must not exceed eight hours per day.
- 6.1.4 Organization and execution of preparation for the training courses is left to the instructor concerned.
- 6.2 The training ends with the final examination.
- 6.2.1 The final examination is only open to persons who have undergone the complete training course.
- 6.2.2 The final examination is divided in to a
- 6.2.2.1 written section which approximates to
- 30 % of the assignments of legal basics,
 - 70 % of the assignments of technical means,
- with multiple answers envisaged. The total number of assignments must be at least 20 with respect to the GSIT and 10 with respect to the GST.
- 6.2.2.2 practical section in which a gas system test or, if required, a gas system installation test is to be made.
- 6.2.2.3 The gas system test may be undertaken as an independent section.
- 6.2.3 The final examination is passed if
- 6.2.3.1 at least 70 % of assignments to No. 6.2.2.1 are solved correctly, whereby from each assignment group at least 50 % must be solved correctly and
- 6.2.3.2 in the practical section for the candidates working alone or in groups of up to 4 candidates, evidence must be given that they solved the assignments without any help.
- 6.2.3.3 If in the practical section a single of group of candidates cannot solve the set assignment then a further assignment may be set.
- 6.3 A completed certificate is to be awarded to the examined training candidates giving the results of the final examination.

Appendix 5

Minimum requirements for GSIT/GST training centers to No 4.4 of the GSIT/GST training guidelines

1. Suitable training room for a minimum of 16 persons
2. Test room with pit, lifting platform or ramp of sufficient length and illumination
3. Road vehicle with CNG engine
4. Demonstration model or suitable computer simulation and demonstration model
5. Manometer
6. Leak detection device
7. Leak detection spray
8. Special tools for installing gas retrofit system
9. Suitable hard and software for adaptation of gas retrofit system to the engine electronics
10. 4-gas-measurement device for externally supplied ignition engines
11. Test and diagnosis equipment for testing OBD vehicles

Appendix I

Gas System Installation Test (GSIT) and other Gas System Tests (GST)

1 Purpose of the test

Gas System Installation Test (GSIT) subsequent to an installation of a gas system and other Gas System Tests (GST) following the UAE Regulation of "Gas Driven Vehicles" paragraph 6 have to fulfill the following requirements. The proper state of the installed gas system is to be verified according to the provisions given in the referred to regulations.

2 Execution of the test, Documentation

- 2.1 The tests have to be made by responsible persons according to Appendix II and by an inspector of Executer/Executer nominated TPI.
- 2.2 The owner has to provide the gas driven vehicle to an approved road vehicle workshop or to Executer/Executer nominated TPI.
- 2.3 During or after inspection, there are
 - 2.3.1 no deficiencies, this has to be documented accordingly in the respective certificate.
 - 2.3.2 deficiencies, this has to be documented accordingly in the respective certificate. The vehicle owner has to get the deficiencies repaired immediately and has to re-provide the vehicle for re-inspection after 1 month at latest showing the former certificate.
- 2.4 The certificates need to have the individual stamp of the certified workshop; a GST/GSIT seal. and must have the following mandatory information:
 - Means of testing
 - Date of first registration of the vehicle
 - Vehicle Manufacturer
 - Vehicle type and built
 - Vehicle Identification Number (at least last 7 digits)
 - Date of Testing
 - Name and address of approved road vehicle workshop
 - Results of the single tests
 - Final result
 - Written name with signature of responsible person, stamp and seal
- 2.5 The signed certificate is to be filed with the workshop and another copy to be handed over to Executer/Executer nominated TPI. TPI Technical Report (TPI Certification) is to be handed over to the customer.

3 Entities to carry out the tests

- 3.1 The tests may only be carried out by approved road vehicle workshops and Executer/Executer nominated TPI.
- 3.2 Executer may request Executer nominated TPI to inspect at any time certified workshop as unannounced visits to make sure they comply with the requirements. The inspector is to be allowed to enter the working area for investigation purposes, all necessary documentation is to be made available and required information to be given. The costs of this unannounced visit are carried by the work shop.

Appendix II

Approval of road vehicle workshops to carry out Gas System Installation Tests (GSIT) or the recurring or special gas system test (GST) and training of the responsible persons and specialist staff

1 General

- 1.1 The approval of road vehicle workshops to carry out Gas System Installation Tests (GSIT) or the recurring or special gas system test (GST) following the UAE Regulation of "Gas Driven Vehicles" is with executer.
- 1.2 The means of approving road vehicle workshops to carry out Gas System Installation Tests (GSIT) or the recurring or special gas system test (GST) and for the related trainings the guideline within the UAE Regulation of "Gas Driven Vehicles" applies.

2 General prerequisites for approving road vehicle workshops

Approval is granted, if

- 2.1 the applicant, its legal representative(s) as well as the nominated responsible persons and specialists are of good repute and show the personal occupational aptitude.
- 2.2 a valid excerpt of the commercial register is presented
- 2.3 the applicant proves that he has nominated at least one responsible person for carrying out the respective tests. The test may also be carried out by a GST/GSIT specialist under the supervision of the responsible person. The responsible persons as well as the specialists need to be named explicitly by the applicant.
- 2.4 the applicant proves that the nominated persons have sufficient skills and knowledge with respect to automotive technology. To do so, certified evidence has to be provided. Moreover, responsible persons need to have at least one of the following engineering degrees or equivalent:
 - Bachelor of Engineering
 - Bachelor of Science
 - Master of Engineering
 - Master of ScienceA Diploma of an University of Applied Sciences or University is considered to be equivalent.
- 2.5 the applicant, its legal representative(s) or alternatively the nominated responsible persons and specialists have passed a training according to no. 7 successfully
- 2.6 the applicant fulfills the provisions of a "Certified conversion workshop"
- 2.7 the applicant confirms, that to undertake the GSIT or GST the persons responsible and those specialists trusted to undertake the GST have sufficient third party insurance to cover all the requirements associated with the test. The applicant has to give evidence on demand and shall maintain the insurances.
- 2.8 the applicant absolves the Emirate, in which he is operating and Executer from all third party claims for damages in connection with the GSIT or the GST caused by him or the responsible persons or the assigned specialists. He confirms the conclusion of the appropriate insurance, and proves this when required and declares that he will adhere to the conditions of the insurance policy.

3 Collateral clauses and restrictions

The approval can be associated with collateral clauses which are required for the proper execution of the GSIT or the GST. The certificate is not transferable. The certificate can be restricted to carrying out the GST only. Changes of personnel/ personal details are to be communicated to Executer/Executer nominated TPI immediately.

4 Withdrawal

The approval may be withdrawn, if during its issue at least one of the provisions of no. 2 is not fulfilled. The withdrawal may be withdrawn if the deficiency is corrected.

5 Revocation

The approval may be revoked, if at least one of the provisions of no. 2 is not fulfilled. Any more it is to be revoked in parts or completely if provisions are violated or if the tests have not been carried out properly. In addition, it may be revoked if the approval was not used for at least 6 months.

6 Supervision of approved workshops

- 6.1 The supervision is with Executer. Executer may inspect itself or let Executer nominated TPI inspect
 - 6.1.1 if the test have been carried out, documented and filed in compliance with the regulations
 - 6.1.2 the approval was actually used and to what extent.

7 Training of the responsible persons and the specialists

- 7.1 Only Executer/Executer nominated TPI are entitled to perform GST/GSIT trainings
- 7.2 It is under the responsibility of Executer/Executer nominated TPI to provide adequate training premises.
- 7.3 The training has to be repeated after 36 months of the previous training, each time followed by a successful final exam.

8 Supervision of the approval procedure and Executer nominated TPI

- 8.1 The supervision of the approval procedure and Executer nominated TPI is with ENAS.
- 8.2 ENAS to verify compliance of the used and performed approval procedures and of Executer nominated TPI procedures with the present provisions of this regulation.
- 8.3 Compliance is to be verified as per ENAS procedures.
- 8.4 ENAS staff and Executer/Executer nominated TPI authorized to undertake verification is permitted to enter at business and operating times the training premises for investigation purposes. Executer nominated TPI to make available the necessary documentation and to give the required information to the related parties.

9 Final Clauses

Changes with approved road vehicle workshops which might change the approval shall be communicated to Executer/Executer nominated TPI without request immediately. A violation will result in a revocation of the approval.

Annex 1

In the UAE regulation of “Gas Driven Vehicles” the following regulations and provisions apply:

No. I, paragraph1 Sentence 1 and paragraph 4 Sentence 1	Part II of UAE.S ECE-regulation No. 110 respectively regarding uniform provisions concerning I. SPECIFIC COMPONENTS OF MOTOR VEHICLES USING CNG IN THEIR PROPULSION SYSTEM; II. VEHICLES WITH REGARD TO THE INSTALLATION OF SPECIFIC COMPONENTS OF AN APPROVED TYPE FOR THE USE OF CNG IN THEIR PROPULSION SYSTEM in the current valid series of amendments and revision.
No. I, paragraph 2 and paragraph 4 Sentence 1	UAE.S ECE-regulation No. 115 respectively regarding unified conditions for an approval of: 1. SPECIFIC LIQUEFIED PETROLEUM GAS (LPG) RETROFIT SYSTEMS FOR INSTALLATION IN VEHICLES IN ORDER TO USE LPG AS THEIR PROPULSION SYSTEM. 2. SPECIFIC COMPRESSED NATURAL GAS (CNG) RETROFIT SYSTEMS FOR INSTALLATION IN VEHICLES IN ORDER TO USE CNG AS THEIR PROPULSION SYSTEM. In the current valid series of amendments and revision.
No. I, paragraph 3 Sentence 1 No. 1 and paragraph 4 sentence 1	Part II of UAE.S ECE-regulation No. 110 respectively regarding uniform provisions concerning I. SPECIFIC COMPONENTS OF MOTOR VEHICLES USING CNG IN THEIR PROPULSION SYSTEM; II. VEHICLES WITH REGARD TO THE INSTALLATION OF SPECIFIC COMPONENTS OF AN APPROVED TYPE FOR THE USE OF CNG IN THEIR PROPULSION SYSTEM in the current valid series of amendments and revision.
No. I, paragraph 3 Sentence 2 and paragraph 4 Sentence 1	ECE-regulation No. 115 regarding unified conditions for an approval of: 2. SPECIFIC LIQUEFIED PETROLEUM GAS (LPG) RETROFIT SYSTEMS FOR INSTALLATION IN VEHICLES IN ORDER TO USE LPG AS THEIR PROPULSION SYSTEM. 3. SPECIFIC COMPRESSED NATURAL GAS (CNG) RETROFIT SYSTEMS FOR INSTALLATION IN VEHICLES IN ORDER TO USE CNG AS THEIR PROPULSION SYSTEM. in the current valid series of amendments and revision.
No. I, paragraph 8	ISO/19078 Gas cylinders — Inspection of the cylinder installation, and Requalification of high pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles.

